

**The Nature of Future
Intelligence Organizations**

**A MONOGRAPH
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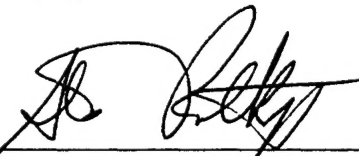
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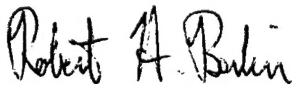
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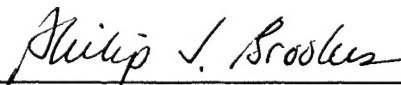
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ABSTRACT

THE NATURE OF FUTURE INTELLIGENCE ORGANIZATIONS by Major Leo R. Pacher, USA, 54 pages.

This monograph identifies the essential characteristics and capabilities of intelligence organization structures for an army force that is global, rapidly deployable and capable of executing full spectrum military operations in joint and combined environments. It identifies these characteristics and capabilities by tracing the evolution of military intelligence organization structures over the past decade. It examines lessons learned from deployments to Somalia, Bosnia and Haiti as well as observations from Division Advanced Warfighting Experiments (DAWE) to determine causes of recurring problems related to intelligence organizational design.

This monograph proposes a traditional, matrix and virtual models as potential intelligence organization structures. It analyzes each model's strengths and weaknesses, identifies essential characteristics, and assesses applicability of each relative to future environmental influences specific to offense, defense, stability and support operations. These environmental influences are stability, complexity and diversity. They are important considerations because they often necessitate changes in organizational design.

Intelligence staffs are resources as much as military units with specific capabilities. As such, commanders should task organize, design and reconfigure their intelligence staffs within the context of environmental influences. This requirement is more important in the 21st Century as the Army continues to wrestle with its role within the changing face of battle. Army leaders must understand the importance of organizational dynamics and design because "cookie cutter" solutions for future intelligence staff organizations are obsolete.

This monograph asserts that organizational restructuring can alleviate some recurring problems. It recommends that the matrix organization is best suited to cope with future environmental influences because it appropriately balances requirements for organizational flexibility, adaptability, and responsiveness relative to the range of environmental stability, complexity and diversity. Each model is intended to provide a framework for building intelligence teams for future military operations.

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CHAPTER I

INTRODUCTION

The U. S. Army is struggling with responsiveness because of changing environmental influences. Recent examples include operational deployments to Bosnia, Haiti and Somalia. Proposed solutions include DAWE, Strike Force, and the prototype brigade. Irrespective of the larger Army solution, strategic responsiveness poses special challenges for intelligence staff organizations. Potential solutions lie in the analysis of environmental influences and the determination of essential characteristics and capabilities of future intelligence organizations.

Methodology

This research involved a broad review of military literature and other academic and professional journals. A review of military literature included documents from the Center for Army Lessons Learned (CALL) and the TRADOC Analysis Center (TRAC). It examined lessons learned from recent operational deployments to Somalia, Bosnia and Haiti as well as observations from the Division Advanced Warfighting Experiments (DAWE) to determine recurring problems resulting from intelligence organizational design. Academic and professional materials provided insight concerning corporate organizational behavior and design. Each source offered differing perspectives on a wide range of topics including team building, organizational psychology, learning organizations, and complexity theory. Many sources presented relevant organizational theories and corporate methodologies with application to the development of future military intelligence staff organizations.

This monograph assesses the nature of future intelligence staff organizations that support the evolving Army doctrine of rapid full spectrum dominance. It is based on the premise that environmental influences drive development of innovative operational concepts and these concepts

necessitate the evolution of appropriate Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) structures.

This monograph begins by briefly describing recent trends to help identify future environmental influences. It also discusses in detail the evolution of intelligence organizations over the last decade because the “current intelligence system is the bedrock upon which [the] future intelligence system will be built.”¹ It examines a traditional, matrix and virtual organizational model for future intelligence staffs. An assessment of each model is structured on essential organizational characteristics and capabilities. These characteristics and capabilities are derived from lessons learned during the evolution of intelligence organizations over the past decade and observations made during the Division Advanced Warfighting Experiments (DAWE). It compares the strengths and weakness of each model and determines which best supports the full range of military operations relative to the range of environmental stability, complexity and diversity. The degree of these environmental influences is specific to offense, defense and stability and support operations.

This monograph suggests that organizational restructuring can alleviate some of the recurring problems identified during recent operational deployments and Army warfighting experiments. It determines the nature of an optimal intelligence organization to support rapid full spectrum dominance in the 21st Century. Recommendations identify specific actions relative to organizational dynamics and design for the intelligence community to prepare itself to support future military deployments.

The Environment

The following trends help define the future environment. Global engagement will continue as national policy. The Army will face an encompassing and complex environment involving the expansion of information technology, diminishing resources and ambiguous threats. Military leaders and doctrine will continue to emphasize joint and combined military operations based on power

projection capabilities. The future battlefield will encompass increased precision, complex terrain and extended battle space.²

The U.S. military must prepare for a full range of military operations including offense, defense, stability and support operations to meet these environmental trends and challenges. Forces will become lighter and better suited for operating in complex terrain. Combat soldiers will have more generalized skills and be capable of participating in the full range of military operations. Conversely, supporting staffs will require more expertise, knowledge and access to specialists to confront increasing environmental complexity resulting from the dynamic interaction of political, military, economic, informational and cultural factors.

Military intelligence organizations will confront an array of internal environmental influences resulting from the trends described above. These influences include stability, complexity and diversity. Stability is the degree of predictability within the focal intelligence organization. The number of non-organic organizational components supporting the focal intelligence organization influences complexity. Complexity is the scope of the interconnected components within an organization. Diversity is the scope and differentiation of intelligence requirements including products, services and consumers.

The Continuing Intelligence Evolution

Whenever the army implements a new operational concept necessitated by environmental change it tends to restructure intelligence capabilities by adjusting and applying doctrine, organizations, and equipment more effectively. This section outlines the evolution of the Army intelligence system over the last decade. It describes each intelligence organization and explains why it was adopted. It also identifies essential characteristics and capabilities associated with each organization.

The CEWI concept emerged during the middle 1980s influenced by lessons learned from Vietnam, the Arab Israeli War of October 1973 and the Army's adoption of Airland Battle doctrine. Airland

Battle was the Army's doctrinal answer to the Soviet threat on the plains of Western Europe. The concept was based on an intelligence battalion consisting of three line companies and a headquarters and headquarters company. Two of the line companies were Signals Intelligence (SIGINT) heavy and the third consisted of Measurement and Signature Intelligence (MASINT) and Human Intelligence (HUMINT) assets. The Headquarters company contained the Technical Control and Analysis Element (TCAE) which was responsible for receiving, collating and assimilating tactical intelligence reports from SIGINT collection assets and passing this information to the G2 in the Division main. CEWI enabled Military Intelligence (MI) commanders to task organize intelligence assets to support maneuver commanders. It consequently fostered expectations that maneuver commanders receive direct support intelligence collection assets in support of their fight.

Analysis and fusion capabilities of CEWI units were limited outside a European threat scenario opposing the Soviet Army. The CEWI organization was designed to focus on a specific threat in a developed theater of operation. Its structure supported its purpose. CEWI suited "static, linear defensive battles, where geometries [were] relatively predictable, line of sight easily discernable and where the enemy irreversibly [committed] himself to a single course of action."³ It was a grouping of stovepipe organizations heavily focused on SIGINT with a standard reporting chain flowing from lower to higher. The intelligence focus was clearly centered on potential armored operations against a SIGINT heavy mechanized Soviet Army in Western Europe.

The Analysis and Control Element (ACE) concept helped CEWI cope with a changing environment. It developed during the early 1990s. This intelligence staff organization was designed to conduct all source processing and analysis. The ACE was functionally structured along intelligence disciplines. Its evolution was necessitated by a dramatic change in the environment involving the end of the cold war and a mediocre performance of the CEWI battalions that participated in Desert Storm. During this time, the Army replaced its strategy of deterrence and forward presence with force projection operations. The military intelligence community followed suit

and quickly transitioned to mission based contingency operations prioritized by supported commanders. This transition to force projection operations manifested a requirement for information to flow from higher to lower at least during the initial stages of deployment of force projection operations.⁴ This was a distinct procedural change from CEWI operations.

The ACE consisted of a headquarters section, an all source intelligence section and a technical control and processing section. The all source intelligence section consisted of an all source production team, a collection management team, a target nomination team, and a dissemination team. The technical control and processing section consisted of a SIGINT Team, a HUMINT and Multi-disciplined Counterintelligence (MDCI) team and an Imagery Intelligence (IMINT) Team.⁵ The ACE added more HUMINT capability and improved the overall balance of all intelligence disciplines. Still, subordinate sections were functionally aligned and set in a rigid hierarchical structure conducive to conducting conventional offense and defense operations.

The ACE solved several problems attributable to CEWI structural design because it integrated intelligence tasks, functions and resources of the TCAE and the Division Tactical Operation Center Support Element (DTCSE). This integration centralized analysis, collection management and technical control into one organization under the operational control (OPCON) of the G2. This unity of effort and direction improved intelligence responsiveness and synchronization for conventional offense and defense operations.

The Corps Military Intelligence Support Element (CMISE) concept also developed during the early 1990s. It provided corps commanders an expanded intelligence capability through dedicated intelligence expertise and linkages to echelon above corps intelligence.⁶ CMISE soldiers were assigned to the theater MI Brigade, attached to the corps MI Brigade and OPCON to the Corps G2. Organizationally, the CMISE consisted of a headquarters section, an intelligence support element, an all source intelligence section, a collection management section, a SIGINT section, an IMINT section

and a HUMINT section. It was clearly designed to reinforce the ACE along functional boundaries if required.

CMISE performed several intelligence functions for the corps.⁷ It established critical links between intelligence organizations Echelons Corps and Below (ECB) with Echelons above Corps (EAC). It filled immediate intelligence gaps by establishing direct and habitual links to theater and national intelligence systems. CMISE essentially flattened the traditionally hierarchical and dimensional military and national intelligence communities. It helped focus and prioritize intelligence support on corps and divisions. This was a critical requirement for a force projection army, focused on rapid deployment for multiple contingencies.

The Corps G2 leveraged CMISE capabilities to support exercises, contingencies or other intelligence requirements. CMISE provided continuity of intelligence operations while the corps ACE engaged in other missions. It enhanced the corps' intelligence capabilities by monitoring countries of lesser priority but still within the Corps Area of Interest and surged to allow the Corps ACE to focus on exercises or contingency operations when required. CMISE soldiers usually focused on "real world" threats. This luxury was generally not afforded to soldiers within the Corps ACE consumed by day to day requirements and exercise preparation.

CMISE required significant boundary work because of its mission, design and chain of command. Each CMISE had different missions, tasks, and focus. CMISE functioned centralized or decentralized, independently or interdependently in garrison or deployed. It was threat or geographic focused depending on immediate requirements. It also had a dedicated and practiced ability to communicate openly and quickly across organizational boundaries. The CMISE was OPCON to its supported corps and organic to an Intelligence and Security Command (INSCOM) Military Intelligence Brigade.

The Deployable Intelligence Support Element (DISE) is a product of meeting the challenges of force projection operations. It's an early entry intelligence support element that enables spilt-based

intelligence operations. The DISE is normally an ad hoc organization and is flexible in design. It is capable of providing appropriate intelligence support to the deployed commander.⁸ Its composition is tailored based on the analysis of the environment and Mission, Enemy, Terrain, Troops available, Time and Civilian (METT-TC) considerations. Forming a DISE is an exercise of rapid team development. For example, a military unit notified of an impending deployment to a crisis in Southwest Asia (SWA) may have only a few hours to assemble the appropriate resources including people and equipment.

The DISE is a versatile organization and can perform several functions. It consists of a small team of specialists with critical communications links to a sanctuary command post (CP) located outside the area of operation. The DISE deploys early to support initial entry operations. It may also support the unit's Tactical Command Post (TAC) or a unit requiring specific intelligence capabilities. A sanctuary CP "pushes" tailored intelligence products through the DISE to the supported commander.

The "virtual" ACE evolved between 1995 and 1997 as the Army conducted a series of Advanced Warfighting Experiments (AWE). Force XXI, another innovative operational concept resulted in "a new and effective organizational design for intelligence support to a heavy division."⁹ The Force XXI Conservative Heavy Division (CHD) virtual ACE is now the Army's most recent evolution in intelligence organizations. It's perhaps the most mature intelligence organization in the Army's conventional force.

The virtual ACE leverages the analytical capabilities of the entire division using information technology enablers that facilitate integration and analysis through a collaborative environment. "The virtual ACE optimizes collection and analytical resources [by involving] all of the analysts in the division as part of the ACE despite their assigned locations."¹⁰ The virtual ACE effectively employs vertical decentralization to exploit subordinate unit analysis capability.

The virtual ACE differs slightly from the traditional ACE structure. The virtual ACE is still founded on a functionally aligned traditional hierarchical structure. Its collaborative capabilities are

enhanced to support commanders fighting in more complex environments. The advantage of the collaborative environment is that the division leverages all of its available analytic resources. However, it is still questionable if it is the most appropriate organizational structure to facilitate effective and efficient intelligence activities of an unconventional nature. The structure is not optimally aligned with probable intelligence requirements for unconventional warfare including analysis of political issues, treaty compliance, civil unrest, election support, and refugee movements. It is optimized for conventional offense and defense missions.¹¹

This brief evolution of intelligence organizations is a manifestation of meeting changing requirements necessitated by more dynamic, complex, and diverse environmental influences. Each of these intelligence organizations is an adjustment in organizational behavior in an attempt to cope with the changing environment. Each adjustment presented a new capability or characteristic.

There are desirable characteristics and capabilities specific to each of these organizations described above. CEWI organizations supported Airland Battle doctrine. Its focus was on defeating a SIGINT heavy, mechanized Soviet Army in Europe. The ACE provided balance to a heavily weighted SIGINT organization and dramatically improved integration among intelligence disciplines at the tactical level albeit in one location. The ACE also enhanced intelligence synchronization, operational control and unity of effort. The CMISE served as a liaison device and improved vertical and horizontal integration using available technology and several forms of inter-organizational networking. It also established formal and informal relationships among intelligence organizations, enabled some multidimensional and distributed intelligence operations and provided an environment to develop intelligence expertise on specific problem sets. The DISE enhanced organizational versatility as leaders tailored resources to contingency mission requirements using rapid team building techniques. The Virtual ACE ushered in intelligence orchestration through collaborative work environments using new information technologies. It also decentralized authority for

intelligence analysis and for the first time effectively employed intelligence liaison teams to its major subordinate commands.

This evolution of intelligence organizations demonstrates the criticality of organizational sensitivity to environmental influences. The intelligence community continues to learn from its own evolution and as it participates in a broad range of military operations around the world. Its organizational effectiveness is dependent upon its ability to understand and cope with environmental influences. Senior intelligence leaders increasingly acknowledge requirements for organizational flexibility, adaptability, and responsiveness. These acknowledgements support the premise that environmental influences drive strategy and strategy drives organizational design. Organizations must anticipate environmental influences. Clearly, the military intelligence system reacted to changes in threat, technology, geography, and operational concepts over the past decade. Now, as the Army approaches the 21st Century, its leadership must anticipate the nature of the environment in which future intelligence organizations interact, continue their evolution and support new and innovative operational concepts.

Organization

This monograph consists of six chapters. Chapters two through four are discussions of intelligence organizational models. Each chapter discusses the structural, process and behavioral components of the traditional, matrix and virtual models using essential organizational characteristics identified in the evolution of intelligence organizations. The traditional organization in Chapter two is used as comparison for subsequent models. Chapter five is a comparison of these models within the context of environmental influences. It attempts to determine which, if any organizational models best support future military operations given the range of environmental influences specific to offense, defense and stability and support operations. The final chapter recommends a framework for building intelligence organizations for future military operations.

CHAPTER II

THE TRADITIONAL ORGANIZATION

The traditional intelligence organization structure was founded in the industrial age revolution. The nature of this organization is based on preplanned, formalized and centralized activities. Its predetermined structure is derived from a TO&E or TDA to accomplish institutional goals. This structure defines the way work is accomplished within the organization. It is based on a division of labor consisting of functions and tasks to help maintain focus, control, and stability. The advantages of this organizational form are derived mostly from habitual interactions among functionally aligned organic sections, strict controls and established procedures for accomplishing prescribed goals. An example of the traditional intelligence organization is shown in figure 1.¹²

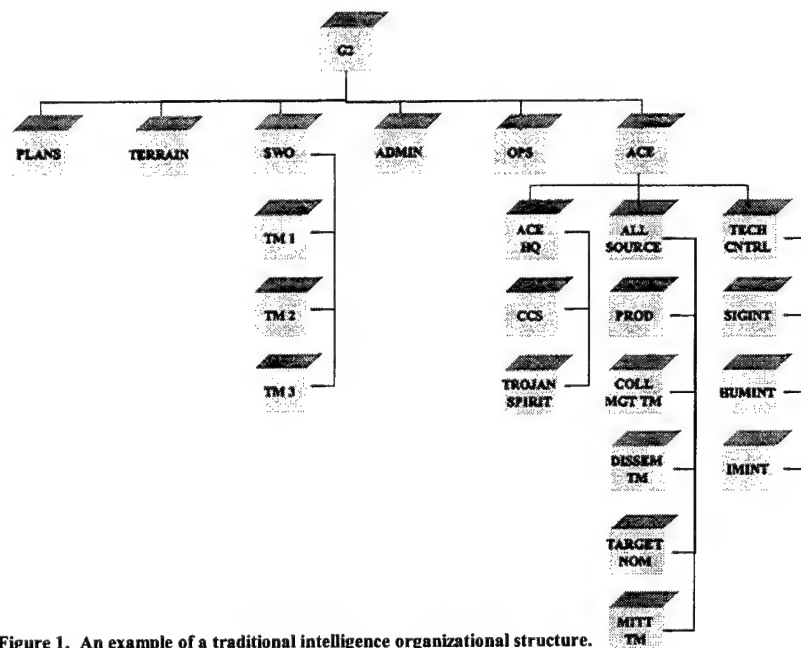


Figure 1. An example of a traditional intelligence organizational structure.

Structure

The structure of traditional intelligence organizations is hierarchical. Hierarchical structures have difficulty competing in dynamic, complex and diverse environments because they have limited flexibility and lack the ability to quickly and efficiently adjust to environmental influences. Their structural orientation is based on preplanned size, composition, division of labor, limited span of control and centralized authority. Although efficient, traditional organizations are slow and inflexible. They are more likely to resist adapting to changing requirements resulting from the demands of full spectrum military operations in a multidimensional environment.

Size really does matter in traditional intelligence organizations. The smaller the size of the organization the more likely interaction will occur among its individuals and teams. As interaction increases the more likely synchronization takes place. However, trends discovered during recent operational deployments to Somalia, Bosnia and Haiti are not indicative of smaller intelligence organizations. Most AARs concerning these deployments indicate that traditional intelligence organizations are getting larger or changing dramatically because they are not sufficiently or appropriately resourced for SASO.¹³ Most identify shortfalls in occupational diversity to cope with complex problem sets. Traditional organizations inevitably expand over time to meet intelligence requirements for SASO. As the organizational size increases it can result in several problems including limited interaction and less integration.

Limited occupational diversity reduces the traditional intelligence organization's flexibility and responsiveness. It is impractical for traditional intelligence organizations to cover the range of threats across the spectrum of military operations and in any environment. This requirement is resource intensive and cost prohibitive. Moreover, analysts assigned to traditional intelligence organizations at echelons corps and below generally do not have the time, training or experience to understand all the nuances of complex unconventional environments. Their focus is on practicing and rehearsing unit

tactics, techniques and procedures for conventional exercise scenarios. Limited functional diversity degrades the organization's ability to tailor resources from organic assets.

The traditional organization's preplanned structure does not support intelligence responsiveness. This assertion holds true especially in diverse environments typical of unconventional operations. During initial stages of deployment planning for unconventional operations, intelligence organizations are not always responsive to the commander's needs because they often lack diversity in occupational specialties. Organic intelligence analysts are primarily trained for conventional offensive and defensive operations.¹⁴ "They are not well prepared for softer analysis of political issues, treaty compliance, civil unrest, vigilance activity, election support, refugee movements, and faction/population intentions and support."¹⁵ Frequently, intelligence analysts experience problems applying traditional methodologies to nontraditional threats and environments. Recent examples suggest that Intelligence Preparation of the Battlefield (IPB) did not adequately influence planning, force design and TPFDD development. During Operation Restore Hope, "the strategic and operational IPB process failed to provide ... commanders the lens through which the factors of METT-T could be focused during the early stages of deployment planning."¹⁶ Clearly, the traditional ACE organization had difficulty supporting intelligence requirements during the early stages of unconventional operations.

Distinct divisions of labor within hierarchical structures contribute to organizational efficiency and effectiveness in more stable environments requiring less flexibility. Groupings of specific roles and responsibilities derived from predetermined requirements in addition to established processes and procedures support the efficient execution of repetitive tasks and functions. These repetitive tasks best support garrison intelligence operations consumed by intelligence summaries, daily briefings, special interest projects and order of battle maintenance. "The general problem of this holistic, structural approach is the identification of [these] functions and unit tasks that are necessary to

achieve a given end.”¹⁷ They are not as suitable to fast pace dynamic support to multiple intelligence consumers requiring tailored products from highly perishable intelligence.

Traditional organizations do not easily adapt to unpredictable environments. Frequent changes in intelligence requirements create organizational stress and threaten internal stability. Members of traditional organizations have strong expectations of organizational stability derived from defined roles and responsibilities, regulated processes and prescribed products and services. Defined roles and responsibilities maintain stable work environments, lower stress and potentially increase efficiency within predominately functionally oriented sections or teams focused on established work processes and conventional threats.

The traditional organization is less suited to rapid team building. Challenges reside in future environments demanding joint and combined operations involving elaborate and unclear relationships. The organization’s hierarchical structure centralized control and encapsulated functionality limits its capacity to compete in an environment requiring individual and organizational flexibility, adaptability and interoperability. Although, the traditional organizational structure allows leaders to shift focus, tailor resources and change missions; adjustments are seldom rapid enough to compete in today’s challenging environments. Future intelligence organizations must be capable of rapid team building to meet operational challenges.

Traditional intelligence organizations have a comparatively limited ability to conduct tactical tailoring. Tactical tailoring is the art of matching people and capabilities from a pool of resources to meet specific operational requirements. Most military operations require staffs with tailored capabilities. The Joint Task Force Commander’s Handbook states that “when forming the staff, the need for experienced personnel possessing a broad view cannot be over emphasized. The staff must be capable of making quick, competent recommendations and decisions.”¹⁸ Traditional organizations are capable of tailoring intelligence staffs or smaller support elements from limited organic assets. However, it is doubtful these temporary ad hoc organizations are equipped to appropriately support

most intelligence requirements associated with non-traditional operations or meet the standard outlined in the Joint Task Force Commander's Handbook.¹⁹ Upon deploying to a theater of operations, units usually learn what was needed last time for another unit in a different place is not needed this time. Building on existing standard templates from similar military operations to help tailor intelligence organizations for unconventional operations is initially useful as a template but ultimately inadequate because every operation is different and resources are not always available.²⁰

Traditional intelligence organizations employed split-based operations to varying degrees during several military deployments over the last decade. Split based operations involve tailoring available resources and are an operational capability to enhance organizational flexibility. They provide a flexible option to the commander by allowing him "to control more force with a smaller immediate staff, resulting in increased mobility. [Although] staff organization and function may have to be adjusted as a result."²¹ "During Operation Restore Hope, the ARFOR G2 deployed only 15 of 67 staff members, leaving the balance at Fort Drum to process, analyze and forward intelligence products to Somalia."²² For Bosnia in 1995, "intelligence organizational structure and systems designs [were] still maturing...focusing on downward support [via] split-based operations and 'broadcast' intelligence."²³ It appears that traditional organizations are capable of conducting split-based operations regardless of their highly structured departmentalized forms.

Despite the technological capability to support split based operations, traditional organizations continue to have problems integrating the intelligence effort across organizational boundaries. Many of these problems are attributable to resourcing shortfalls, limited structural flexibility and member expertise. Split based intelligence operations are dependent on intelligence support bases or sanctuary CPs. Intelligence support bases are only useful if they are properly resourced, informed and lead. Arguably, traditional organizations are not adequately resourced to support split based operations. Methods are available to minimize potential problems. For instance, qualified "liaison officers...are very effective in focusing and coordinating sanctuary support. Establishing 'analytical

lanes' with sanctuary support is essential to focus the effort and preclude analytical gaps or duplications."²⁴ Sanctuary support is best used for individual, staff, or special long term planning projects. These projects often require specific expertise, technology or input from large number of analysts, intelligence units or agencies.

Process

This section discusses the processes of traditional organizations. Traditional intelligence organizations have highly focused, controlled and centralized processes. Communication flows from top to bottom and often becomes skewed as it passes through multiple hierarchical layers. Hierarchical boundaries can limit integration because leaders focus on functional responsibilities rather than end products. Decision-making is centralized and concentrated at the highest levels. Controls are embedded throughout the organization's functional orientation. All of these processes affect the performance of the traditional organization.

Traditional organizations support sequential work processes. Subordinate sections complete their part of the work and then pass it onto the next section until the product is completed and presented to an authorized decision-maker in the chain of command. This process is slow and often inadequate for unconventional operations because intelligence organizations are service oriented with many customers. Each customer has unique intelligence needs. A fast pace unpredictable operational environment necessitates enhanced integration and simultaneous work processes.

The traditional intelligence organization structurally imposes multiple functionally aligned boundaries. These boundaries encapsulate intelligence functions and deter integration, all source analysis and product development. Functional team leaders buffer their sections from external distracters to maintain team stability. Sometimes, these leaders isolate their sections unknowingly at the expense of the supported unit's overall mission. Reinforcing unnecessary functionally oriented boundaries contributes to increased section isolation and causes inter-organizational struggles for

power and resources among functional managers. Increased isolation degrades integration and limits organizational responsiveness ultimately failing to adequately satisfy the consumer's intelligence needs.

A myth about traditional organizations in military intelligence operations is that there is unity of effort because one person is in charge. In reality, the traditional intelligence organization does not have a person dedicated to the overall synchronization of external intelligence activity despite a heavily weighted leadership ratio and hierarchical structure. The G2 is ultimately responsible for the unit's intelligence mission but typically spends the majority of time in routine meetings ensuring a common picture of the enemy within the organization and responding to current crises. The ACE Chief is technically responsible for coordinating and controlling the intelligence activities of the ACE. Unfortunately, the ACE Chief is usually overwhelmed by competing requirements and often assumes the role of chief administrator or chief analyst. Rarely is the ACE chief able to adequately accomplish both. The traditional intelligence organization is not sufficiently resourced to conduct the explicit coordination necessary to achieve integration of intelligence activity external to its organizational boundaries.

The traditional organization is most capable of integrating internal functional processes. Structurally embedded attributes such as strict controls, established procedures and authoritative leadership support integration of functionally oriented sections. Traditional organizations are better at synchronizing internal intelligence activities because an explicit chain of command helps maintain control over organic personnel, equipment, training, policies and procedures. This stable and authoritarian structure lends itself to internal integration when required.

Integration within the traditional intelligence organization is centralized. The ACE is the nexus of the traditional tactical intelligence organization. All input flows into the ACE where it is processed, analyzed and packaged. Output consists of standardized intelligence products and services generic enough to support a broad range of intelligence consumers. This centralized control of analysis and

standardized product development is not commensurate with intelligence requirements for unconventional operations. Recent operations in Bosnia suggest that intelligence analysis is most useful if decentralized and conducted closer to the source where it is more responsive and relevant to the commander responsible for an assigned geographic area.²⁵

Vertical integration involves passing information from one command level to the next. Hierarchical intelligence organizations are effective at vertical integration within each level of war. For example, tactical intelligence organizations within an army corps exchange information relatively well among themselves. However, these same tactical intelligence organizations experience difficulty interacting with operational or strategic intelligence organizations outside database servers. Data exchange among traditional intelligence organizations within a level of war is generally better because of an established chain of command, similar technology and an implicit understanding of traditional intelligence requirements. Intelligence liaison teams can enhance vertical integration. Vertical integration with major subordinate units improved with the formation of the Analysis and Control Team (ACT) during the DAWE.²⁶ These teams deploy with major subordinate units and serve as intelligence liaisons with the division intelligence organization.

There are some other problems with vertical integration in traditional organizations. Hierarchical bureaucracy contributes to missed opportunities when responses to commander's intelligence requirements are slow, lost or simply ignored. During the DAWE, the 4th Infantry Division G2 had problems attempting to institute a collaborative analysis environment. The creation of DDOs "was less effective between the brigades and the TAC because the brigade S2s viewed updating their portions of the DDO as a low priority [and] brigade commanders had little confidence in the analysis of other S2s."²⁷ Intelligence organizations in Bosnia experienced similar problems.²⁸ Interaction with higher intelligence organizations is confined to formal collection management processes or through electronic data exchanges such as INTELINK or other servers that facilitate pushing and pulling information.

It is important to understand the nuances of integrating intelligence activities because future military operations will depend on the integrated efforts of joint and combined military resources as well as non-governmental organizations to collect, process and analyze intelligence. A problem of achieving integration in joint and combined operations is that supporting and supported organizations usually have different operating procedures.²⁹ Recent operational deployments suggest that deploying intelligence organizations receive augmentation to support operational requirements especially if serving as a joint or combined headquarters. The intelligence effort must be unified. The traditional organization in its purest form is perhaps the least capable structure to integrate non-organic resources. Its intrinsic formalization and adherence to established processes and procedures develops more boundaries as non-organic resources are assimilated. There is greater risk that traditional organizations will have difficulty incorporating these assets unless capable leaders are able to facilitate integration.

Inter-organizational coordination is essential to collaborative environments seeking to improve intelligence orchestration. According to the 4th Infantry Division Commander in an article on Force XXI intelligence operations, "intelligence orchestration aptly describes the art and science of focusing scarce collection and analytical resources at the right times and places to maximize intelligence support to commanders."³⁰ In traditional organizations, focusing resources at the critical time and place requires explicit coordination among key decision-makers within the chain of command. Arguably, traditional intelligence organizations do not effectively or efficiently support intelligence orchestration because orchestration requires dynamic and innovative adjustments to the plan.³¹ Explicit coordination is not always feasible because the authority for making key decisions is centralized and high in the organizational structure and the time available is often limited. Subordinate leaders have limited capacity, desire and motivation to span organizational boundaries outside the technological domain and to foster a collaborative environment capable of intelligence

orchestration. More senior commanders and authorized staff officers reserve important decisions like target selection and collection asset focus.

Collaborative work environments require extensive boundary work.³² Boundary spanning contributes to integrating intelligence activities with external systems. The traditional intelligence organization typically takes a passive role in spanning organizational frontiers. Organic representatives coordinate intelligence activities at regularly scheduled meetings as determined by a battle rhythm but rarely do they actively seek external integration unless required through the chain of command or to accomplish specific organizational goals. Special augmentation teams from national intelligence organizations such as NISTs usually coordinate intelligence requirements for intelligence support from external sources.

The traditional organization lacks responsiveness in unstable environments because intelligence requirements drive intelligence operations and they are seldom clearly defined. Intelligence requirements tend to evolve over the duration of stability and support operations. It is difficult for traditional organizations to quickly react to elusive or ambiguous requirements. The organization's capacity to satisfy changing requirements is occasionally overwhelmed servicing many consumers because it is a functionally oriented structure supporting an all source product-oriented clientele. Intelligence analysts and leaders tend to cope with these demands by relying on a narrow range of digitized systems and information technology to process collected information and produce required products within severe time constraints. Typically, a technological process using the All Source Analysis System (ASAS) is the overriding means to achieving integration and a common enemy situation. The divisional ACE and its subordinate elements are mostly focused on packaging and presenting information derived from information technology. At echelons corps and above, higher manning levels enable more intelligence analysis and the formation of product oriented teams.

Intelligence presentation in traditional organizations usually consists of standardized electronic data exchanges or written estimates in standardized formats because they serve large customer bases.

Additional requirements beyond the prescribed product checklists create stress within the organization and potentially limit responsiveness. Organizational responsiveness is critical to future military operations. Even a perceived lack of responsiveness can influence consumer behavior. Too often commanders are prone to conduct their own analysis when uncertainty or other factors hinder organizational responsiveness. During the DAWE, "commanders ... were tempted to use [information that was not analyzed or confirmed] from MCS, JSTARS and UAV to overestimate their knowledge of the situation and shorten their planning process."³³ This observation reinforces that some commanders are more likely to conduct their own intelligence assessments if their intelligence organizations are not responsive. It also reinforces the point that rapid integration across functional boundaries is essential to provide accurate all source intelligence to consumers.

Traditional intelligence organizations usually deploy with their supported command headquarters despite available technology to enable split-based operations. One explanation is the importance of supported commanders knowing that "if you need them they'll be there." Proximity is another form of control and contributes to organizational responsiveness. Commanders want responsive intelligence organizations. Some commanders may perceive that separation from the operational problem would limit intelligence responsiveness and quality.

Another advantage of proximity and deploying traditional intelligence organizations is that analysts gain a better appreciation for operational environment. Proximity to the operation problem is generally better for less diverse, conventionally oriented traditional intelligence organizations increasingly shrouded in technological processes and solutions. Its difficult to adapt to the reality of an environment you cannot conceptualize or appreciate. Intelligence analysts assigned to traditional organizations benefit from an understanding and appreciation of their immediate area of operation. They are better able to interact and serve consumers if they experience similar contextual stimuli from the area of operation.

Analysts must quickly develop the capacity to analyze political, economic, and societal information to better serve the commander's ability to increase efficiency and effectiveness of force employment. In Haiti, proximity was valuable. It allowed analysts to see the Haitian people, activity and potential problems within the same environmental context as the operators on the ground. Analyst understanding of the operational environment contributed to better communication, intelligence products and more accurate predictive analysis.³⁴ Proximity to the operation supports direct observation and potentially a better understanding of the environment.

Behavior

Structural characteristics influence behavior and interpersonal relationships within an organization. The traditional structure characteristics that affect organizational behavior include authoritative leadership, trust and confidence.

Traditional organizations have high leader to soldier ratios. Several well trained, knowledgeable leaders are critical in traditional organizations because they strictly manage the intelligence activities of their sections at all levels within the hierarchy. Traditional organizational leaders require communicative and interpersonal skills. However, these skills are not critical because of the authoritarian nature of the hierarchical structure. A potential concern in adapting organizational structures to cope with environmental influences is the adequacy of essential organizational leadership skills.

Intelligence leaders in traditional organizations are more prone to engage in risk averse behavior. They tend to stay within their functional areas because that is what is expected of them. Clear lines of demarcation make it easier for functional leaders to focus in their lane and satisfy others' expectations of them by producing required products or services. Heavy workload demands also maintain leader's attention on their section's functional responsibilities fostering conservatism and potentially stunting innovation. Often, leader concerns focus on gaining or losing power and authority because individual

behavior is rewarded. This may degrade the organizational capacity to adapt to environmental influences.

Organic team members of traditional intelligence organizations generally have more trust and confidence in each other because they work together more frequently. This is a critical advantage because the more frequently members of teams work together the more efficient their tactics, techniques and procedures and the more timely and accurate the intelligence product.³⁵ Traditional organizations have more time to build habitual relationships. In garrison and during deployment members of traditional organizations typically work together in small functionally aligned groups. They share similar experiences and gain familiarity with each other's strengths and weaknesses. Arguably, the more trust and confidence team members have in each other the more responsive they are meeting requirements and making decisions.

Trust is not essential for efficient intelligence operations in hierarchical organizations despite a structural disposition to foster trust among its organic members. Authoritative policies, centralized control and standard procedures common to the traditional organization minimize requirements for trust and support efficient operations for environments suited to large scale, conventional and repetitive production operations. Traditional organizations were built for industrial age economy of scale operations in which structure provided a framework for mass production and quick assimilation of relatively uneducated workers. Trust and confidence among the workforce were seldom requirements or necessary to conduct operations.

The culture of the traditional intelligence organization is firmly established. The ACE is almost a decade old and its tactics, techniques and procedures are generally understood within the intelligence community. It may not even be possible or desirable to attempt dramatic organizational changes.

CHAPTER III

THE MATRIX ORGANIZATION

The matrix organization combines the advantages of the functionally oriented traditional organization with a project-oriented structure. It essentially integrates two distinct groupings – the function and the product or service. The matrix organization is one of the most complex structures because it creates dual responsibility within the organization. People working in matrix structures each have a project and a functional leader. Both leaders answer directly to a Senior Intelligence Officer (SIO).

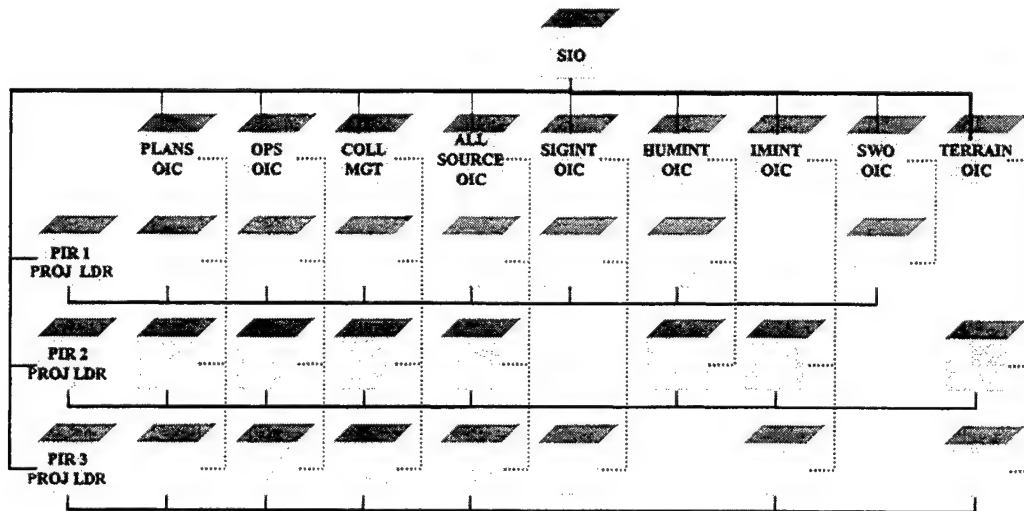


Figure 2. An example of a matrix intelligence organizational structure.

In the matrix organization, a project team leader is overall responsible for product development despite limited formal authority over supporting resources. The project team integrates and analyzes information from its functional members and presents a finished intelligence product to a consumer. The functional manager has direct formal authority over organic resources but only indirect authority over product development. The functional manager collects, processes, maintains and provides information to the project team through an assigned functional representative. He also provides

technical expertise and advice directly to the project team leader. Sharing authority may appear complicated but it is not new. "Almost all of us were raised in the dual authority system of the family."³⁶ Figure 2 is an example of a matrix structure with traditional intelligence functions.

Structure

The matrix organization is built on formal and informal relationships. It is flexible and capable of coping with a range of environmental influences. The matrix organization is not based on a predetermined structure derived from a TO&E or TDA although, it may take on degrees of permanency as the situation requires. The matrix structure is derived from identified needs and requirements to accomplish organizational goals.

The matrix structure is less hierarchical than the traditional organization. It has more potential to function effectively in unpredictable complex environments requiring organizational flexibility because of its limited bureaucratic and decentralized nature. Its flexibility enables leaders to rapidly shift focus and priorities providing a greater capacity for competing in dynamic environments. Matrix organizations are also more likely to quickly respond to short term changes in local conditions.

The matrix organization's structural flexibility enables the SIO to tailor resources for accomplishing unanticipated intelligence missions. Team members with specialized skills are grouped to form temporary teams to accomplish specific goals. These team members are not predisposed to specific expectations concerning preplanned or standard taskings or other support requirements common in traditional organizations. Their expectations are more likely to be in line with change rather than constancy and will balance individual and team morale.

The size of the matrix organization affects many aspects of its performance. Although better able to accommodate change than traditional organizations, matrix organizations still have limitations. "The more standardized the outputs of an organization, the larger can be the size of the work unit."³⁷

The matrix organization is more effective if it is smaller because its products are generally innovative and tailored to specific needs of a consumer. The opposite is true of traditional organizations.

Recent operational deployments suggest that the size of the intelligence organization and the span of control for the SIO expands and contracts over the duration of military operations. Methods exist to mitigate these problems within the matrix organization. The SIO can appoint deputies to manage project groupings as the span of control increases. Project groupings are based on similarities. However, appointing deputies to manage project team groups increases the hierarchy of the organizational structure and may ultimately negate some of the advantages of the more horizontal nature of the matrix organization.

There is a limit to span of control for matrix leaders. Project team leaders can only integrate so many functions and functional team leaders can only support so many projects. According to Colonel Lydal Urwick, author of *The Manager's Span of Control*, "no supervisor can supervise directly the work of more than five or, at the most, six subordinates whose work interlocks."³⁸ Other literature questions Colonel Urwick's assertion. Most of the studies researched for this monograph suggest a range of six to fifteen subordinates with some identifying supervisors of mass production organizations having as many as fifty or more subordinates.³⁹ As the organization expands and becomes more complex, leaders will naturally attempt to maintain stability by imposing controls such as appointing additional leadership positions to coordinate intelligence activities. It seems practical that the matrix organization project leader should realistically supervise the lower end of the supervisor to subordinate ratio because of the limited standardization and control mechanisms brought about with the "adhocracy" of team building.

Matrix organizations are better poised than the traditional intelligence organization to accommodate group expansion. Its organizational flexibility facilitates integration of a broad range of specialties. Complex environments necessitate integrating multiple intelligence projects and teams across functional, process, geographic, and technological boundaries. Caution is required because

organizational diversity increases span of control and may present circumstances that SIOs cannot possibly manage.

The matrix concept does not impose standard resource constraints based on TO&E solutions similar to the traditional intelligence organization. Matrix organizations promote functional diversity. Ideally, organic members of the matrix organization consist of a group of core intelligence occupational specialties tailored to the parent unit's possible areas of operation. An organization so predisposed to possibilities within its areas of commitment is better positioned to exploit its diversity and strengths upon crisis development. These analysts are likely to be more responsive to their commander's needs during the initial stages of a crisis. A small standing garrison force is sufficiently capable of quickly tailoring products and solving problems because solutions usually involve finding available information, or specifically communicating requirements to higher organizations versus producing the information with limited organic assets. These requirements generally center on IPB products to support the early stages of deployment planning. As the crisis progresses and augmentation arrives the SIO has the flexibility to integrate them into the matrix structure as part of existing project teams or create additional teams to satisfy other requirements. Unfortunately, depth is often sacrificed for diversity in resourced constrained environments.

Matrix organizations are a conglomeration of cross-functional teams. There is not a clear division of labor except through assignment of specific missions to project teams. Each project team is intra-dependent. The organizational structure forces interaction and information flow among several different functions and processes. Its form creates cooperation through shared responsibility among project and functional team leaders because it is built upon a functionally oriented traditional structure with project team leaders horizontally juxtaposed to facilitate product, threat integration and development (See figure 2). As requirements increase so do project teams. Project teams are grouped together based on shared similarities including function, process, product, customer, geography or skill sets. Two examples of project teams include alignment by geography or existing

methodology such as PIR. Project teams are mission oriented rather than functionally oriented. The number of team members, functional representatives, and specialties expand, as projects become more demanding and complex.

Organizational resources group by product, process, function, skill, geography or consumer in matrix organizations. "Unit grouping encourages intragroup coordination at the expense of intergroup coordination."⁴⁰ A project team is rarely entirely self-sufficient. Inter-dependencies continue to exist among external organizations. Matrix teams compete for external resources but avoid establishing external relationships. They require explicit methods for boundary spanning because they tend to avoid external relationships. Matrix leaders must become proficient at boundary manipulation to cultivate external resources and protect internal resources. These resources include information, knowledge, expertise, people and equipment. Matrix leaders must understand external capabilities because they are dependent on external support. Leaders must develop networks and maintain associations. They must also make better use of existing resources by getting work to flow horizontally as well as vertically within the organization.

An organizational trend in recent military operations is rapid teambuilding. During Operation Joint Endeavor (OJE), "[intelligence] units adapted organizations, products and processes to the OJE operating environment and intelligence requirements. Innovation and imagination were the key to meeting commander's needs."⁴¹ Examples include IPB applications, and the creation of intelligence cells with specific responsibilities tailored to time or function. In essence, these intelligence organizations formed matrix teams. Unfortunately, as the requirement for teambuilding increases, the process itself becomes increasingly more difficult because of rapidity of operations and compressed timelines. Other barriers to team building in matrix organizations include understaffing, ambiguous roles and responsibilities, stressful environments, and criticality of decisions that are made as a result of team efforts.⁴²

The matrix organization is capable of conducting rapid team building. It balances organizational stability with sensitivity to environmental demands. Intelligence focus in matrix organizations is usually better because a project team leader is ultimately responsible for accomplishing the team's assigned project. Team members also have more motivation because of decentralized authority. Matrix organizations do not have clear functional lines of demarcation nor do members have expectations of predetermined intelligence projects, products or services. Therefore, any changes in structure tend to have less of an impact or create stress that threatens organizational stability.

The matrix organization combines the benefits of a standing organization with those of an ad hoc organization. Organizational complexity increases as more ad hoc teams with tailored and often functional capabilities specific to other services are absorbed into the matrix. The matrix organization not only becomes more complex because of its temporary nature but also because of the rapid integration of additional people, processes and equipment to help coordinate work. Nonetheless, matrix organizations are better poised to support expansion than the traditional intelligence organization.

The matrix organization responds to environmental influences and consumer needs by forming project teams.⁴³ Project teams are formed to satisfy new requirements and are dissolved when the requirement is satisfied. These teams are product and services oriented and are less likely to become attached to routine tasks, functions or prescribed duties. Requirements beyond the initial prescribed product checklists are less likely to cause stress because stress is distributed and absorbed among the entire matrix organization. Unfortunately, matrix team members are also more susceptible to role ambiguity as they adjust to satisfy unforeseen requirements.⁴⁴ Over time member uncertainty may cause stress and conflict within the organization.

Split based operations are easier to execute in matrix organizations because rapid team building is the essence of the organizational model. In most cases, a portion of the intelligence organization forward deploys if only to present information to the commander. A DISE could easily function as a

project team in the matrix organization. In fact, it's feasible to build the matrix structure around several intelligence support elements with each potentially serving as a DISE tailored for a specific purpose. If proximity is necessary, additional teams can deploy forward tailored to meet emerging operational demands.

Process

Maintaining unity of command in matrix organizations is difficult because of its decentralized nature. Its embedded dual authority violates the principle of unity of command. Nevertheless, decentralized intelligence operations and decision making are becoming even more necessary in complex environments because "not all decisions can be understood at one center, in one brain; [they] allow organizations to respond quickly to changing local conditions; [and provide] a stimulus for motivation."⁴⁵ Intelligence activities and decision-making processes are distributed throughout the matrix intelligence organization and potentially the entire intelligence community.

The strength of the matrix organization is based upon its capacity to span multiple organizational boundaries. Representation of external and nontraditional sources of information within project teams facilitates active boundary work and enhances necessary synchronization of multidimensional intelligence activities. In Bosnia, it was essential to "exploit intelligence capabilities across service and agency boundaries by sharing information among echelons of command and the participating coalition partners to meet mission needs."⁴⁶ Matrix organization characteristics were beneficial to operations in Bosnia where some Task Force Eagle intelligence teams had representatives from external organizations serving as primary analysts. These analysts also had secondary interests as liaison officers satisfying requirements of their parent organizations.

Information flow and processing is also decentralized in matrix organizations. Input and output is difficult to control because it is often multidirectional and does not necessarily enter or exit from one or two points within the organization. Multiple teams within the organization structure and

potentially at several geographic locations conduct information processing. This capability provides a flexible alternative to the highly centric traditional organization. It also provides the capability to conduct first phase analysis at the source of the information.

The matrix form minimizes delays in information flow through direct representation of intelligence functions and sections in project teams. For example, a G2 operations representative working in the DMAIN only needs to call the G2 operations representative assigned to the project team responsible for a specific PIR to determine if the criteria for executing a commander's decision is met. Each project team has a dedicated leader and team members with tailored capabilities to focus on a commander's PIR. In this example, established methodologies like PIR focus intelligence and are easily interwoven to enable better responsiveness to intelligence consumers.

Future military operations will depend on the integrated efforts of joint, combined and non-governmental organizations to develop and analyze intelligence. The matrix organization is better able to integrate external resources because its structure is based on liaison. Structural attributes integrate intelligence activities with external organizations. For Example, in Haiti, "the MNF J2 believed intelligence support and connectivity to adjacent and subordinate units so important that he detailed officers from his own staff to serve with those organizations."⁴⁷ This spanning allowed external organizations to adapt and conform to the MNF's procedures and techniques and fostered integration to accomplish intelligence goals. In a sense, the MNF J2 created a matrix organization using a host of liaison officers. Each officer contributed information and expertise in a collaborative work process for goal accomplishment.

The matrix organization potentially has more horizontal boundaries than the traditional structure because of its expandable and cross-functional interdependent nature. Excessive horizontal boundaries may adversely affect integration. These boundaries exist wherever interaction takes place between representatives. They are identified according to interaction among organizational elements. The greater the number of boundaries the greater the risk of failure. Disruptions across boundaries

are especially complicated when non-organic teams are integrated within an established system because "the connections and interdependencies within a system component are likely to be tighter and greater than those between system components."⁴⁸ Matrix intelligence analysts are more likely to conduct analysis within their own teams than seeking assistance from an external source. Cross-system intra-dependencies are critical to the system whole. Technological enablers help to span boundaries and decrease the likelihood of communication failures. However, they also establish additional boundaries where they connect.

Integration across intelligence functional boundaries is enhanced in matrix organizations because functional team leaders are less likely to buffer subordinates from external disturbances. In fact, the intra-organizational dependency of the matrix structure helps prevent isolation of functional members. Dependency enhances the organization's motivation to conduct intelligence analysis through collaboration and ultimately improve intelligence orchestration. Project teams span their organizational boundaries using formal and informal networking techniques to facilitate intelligence orchestration. Implicit in intelligence orchestration is a need for project teams to actively seek interaction via redundant mediums because the process requires dynamic and innovative adjustments to the plan.

Another reason for the matrix organization's larger capacity to integrate intelligence activities with external organizations is that it is appropriately resourced. Multiple intermediaries are available to conduct explicit coordination necessary for achieving required integration with external intelligence organizations because the matrix organization is rank heavy. It has multiple project and functional leaders capable of assisting the SIO in synchronizing the intelligence effort external to the organization. Although, a drawback to appointing project leaders responsible for project accomplishment and integration is added managerial overhead.

Decentralized authority and decision-making within the matrix organization improves the project team's ability to quickly adjust to changes in the environment. This capability is beneficial because it

enables responsive intelligence through simultaneous product development. Responsive intelligence is critical to future military organizations designed to preclude threat action through superior situational awareness. However, responsive intelligence must also be accurate. There is always the risk of sacrificing accuracy for speed.

Matrix organizations do not require the same considerations of proximity as the traditional organization. It is not necessary to deploy the entire matrix organization with its supported force because each project team is capable of autonomous operations. Project teams are more capable of autonomous operations than traditional organizations because they are mission specific, representative of available intelligence functions and less dependent on sequential work processes to achieve a goal. The matrix organization is less dependent on proximity to the operational environment and external sources. The geographic location of matrix teams is dependent on mission requirements and not structural vulnerabilities.

However, little would stop a commander from deploying his intelligence organization to the area of operation if desired. Trust is always a critical factor to enabling distributed intelligence operations. During the initial stages of Bosnia distributed capabilities at the tactical level were sparingly used or not at all. As considerations of time and space become increasingly more important in the strategic sense, "tailored response packages may eventually demand that only the essential capabilities be deployed forward."⁴⁹ The matrix organization is a vehicle to support this requirement.

Matrix organizations are capable of bridging the traditional levels of responsibility from strategic to tactical. They are well suited to fast pace dynamic multidimensional environments with an array of consumers requiring tailored products from highly perishable intelligence. Matrix work is decentralized and involves integrating multidimensional resources. This is important because multidimensional intelligence operations are growing in prominence and utility as the US military continues participating in SASO around the world. The division of tactical, theater and strategic intelligence was less distinct in Bosnia and will likely remain so in future SASO environments. Task

Force Eagle “received sanctuary analytical and exploitation support from component, theater and national intelligence centers.”⁵⁰

Behavior

The matrix organization’s flexible, dynamic and semi-structured nature may not provide the necessary environmental stability required by its members. People need structure because it provides predictability. Dysfunctional organizational behavior results from unpredictable and unstructured working environments. Even perceived vulnerability and strain can increase stress and lower efficiency.⁵¹ Matrix organizations place bigger demands on intelligence leaders to continually monitor, assess and maintain relatively predictable work environments with cross-functional cooperation.

Matrix members require a higher tolerance for uncertainty and ambiguity than traditional organizations. Lack of clearly defined roles and responsibility for matrix members makes it difficult to maintain a stable and predictable environment. Role uncertainty can create stress and confusion. Soldiers trained for specific military occupational specialties are less inclined to accept non-traditional roles. Matrix organizations improvise to solve new problems. A 98G communications interceptor could serve as an interpreter. A 96D, imagery analyst, could serve as a generic intelligence analyst. A 96E could serve as a HUMINT collector as well as an analyst.

Potential barriers to individual, team and organizational performance in matrix organizations come from the organizational structure itself, especially the interaction between the project and functional team leaders. Recent studies suggest that perceived benefits derived from matrix organizations may not be realized because of conflicts between functional and project managers.⁵² Matrix leaders must share information and facilitate cooperation throughout the organization for it to be effective.

Leaders have prominent roles in the matrix organization. As discussed earlier, every team member has at least one functional and one project leader. This leadership dynamic requires even greater

communicative and interpersonal skills than the traditional organization to facilitate intelligence activities through cooperation and coordination. Leader concerns cannot focus on gaining or losing resources to other team leaders but on sharing resources with them. In matrix organizations, project accomplishment is greater than its functional parts. The matrix structure provides a framework for leaders to transcend functional boundaries because members of traditionally functional sections are now part of a diverse team composed of all intelligence functions. The matrix form compels physical integration and leaders must negotiate for organizational resources.

Conflict among functional and project managers resulting from excessive changes in missions and priorities should be minimal because the project manager is overall responsible for team members. However, stress and disenchantment are likely byproducts of having more than one boss, frequently changing priorities, and vague roles and responsibilities that build with each team assignment. Functional team leaders are less likely to contend with problems arising from shared authority because their power rests in knowledge and information. These resources are easier to share because they are not tangible resources like equipment and personnel.

The same attributes that limit conflict among functional leaders in traditional organizations contribute to conflict among project leaders in matrix organizations. Competition among project team leaders for resources within the organization is expected. Leaders naturally want to build the best team. The SIO must determine intelligence project priorities to minimize conflict among project team leaders. Expertise within the organization is shared. It is apportioned according to the priorities and other requirements determined by the SIO.

The matrix organization may potentially increase innovation through risk taking because of the shared responsibility among the organization's leadership. Intelligence projects have more than one leader responsible for supporting goal accomplishment. The potential effects of risk taking are minimized if only one leader's contributions fail while attempting to use innovative solutions. Risk taking increases innovation and the organization's capacity to be more responsive and adaptable.

Matrix leaders take risk through cooperation and collaborative work for the good of the whole organization.

Members of matrix teams are less likely to trust each other and non-regular team members because they have few shared work experiences. These conflicts result from lack of familiarity of team member strengths and weaknesses, hidden agendas, and organizational biases taken from home station. Tactics, techniques and procedures are also less likely to simplify work processes within the team because of their temporary nature. Attempts to establish standing operating procedures will be difficult for short-term projects. Despite increased physical integration of intelligence functions, the lack of trust and confidence in team members may hurt cooperation, collaboration and ultimately organizational responsiveness.

A potential difficulty confronting the implementation of matrix organizations is the long-standing cultural expectations established over the last decade with the traditional intelligence organization. The chain of command and organizational leadership is recognized in any traditional organizational structure. Soldiers expect someone who is higher in rank to take an active leadership role. The matrix organization considers every team member an asset regardless of rank. Lower ranking soldiers initially experience discomfort with exercising authority and making decisions as functional representatives within their assigned project teams. Matrix organizations require a rigid selection process to identify people with appropriate qualities and characteristics. An opposing perspective considers an equally disconcerted traditional leader now sharing responsibility and authority with junior ranking people.

CHAPTER IV

THE VIRTUAL ORGANIZATION

The virtual organization is a relatively new concept empowered by the explosion of information technology and necessitated by environmental influences. Virtual organizations are described in many ways. One description is that they are groups of highly skilled individuals or teams separated by organizational and geographic boundaries that come together to serve a common purpose.⁵³ Another description is that virtual organizations maintain core competencies and outsource other less critical functions to external organizations. "Virtual organizations seek to push as many routine functions outside its boundaries as possible."⁵⁴ External organizations produce tailored products that are disseminated via a variety of media to satisfy the focal organization's needs. This methodology consisting of decentralized work processes and informal supervision allows the organization to focus on its core competencies. The military is an unlikely candidate for transforming totally to a virtual form. However, many of the organizational traits and characteristics deserve consideration when designing new organizational structures to meet environmental demands and operational goals.

The components of virtual organizations include people and organizations, links and purpose.⁵⁵ The people are highly skilled individuals. They are specialists and experts in their field with years of experience. Links are often multidirectional. They are boundaries separating resources brought together for a common purpose. Boundaries are overcome by the effective use of information technology to enhance communication. These links facilitate integration, cooperation and collaboration among people who become virtual members of the focal organization. Although, virtual organizations can take many forms, one example is at Figure 3.

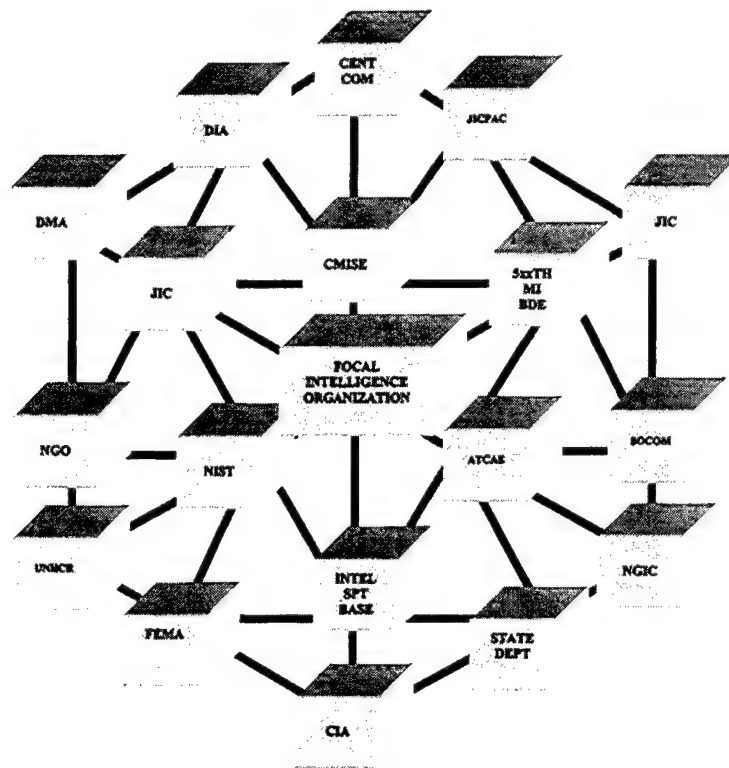


Figure 3. An example of a virtual intelligence organizational structure..

Structure

The virtual organization structure is mostly horizontal. It is the antithesis of a traditional hierarchical organization. Like the matrix organization, it is not based on a predetermined structure derived from a TO&E or TDA. The form of the organization is derived from requirements. The virtual organization rarely takes on degrees of permanency because operational requirements are seldom permanent. It has a flexible structure and its advantages include innovation and adaptability.

Horizontal structures are not always efficient. There are tendencies toward duplication of effort and loss of focus because self-managed autonomous teams conduct work processes and product development. Nonetheless, in the corporate world, "significant organizational transformations are occurring, in which hierarchies are enriched, if not replaced, by horizontal networks; and the more traditional functional chimneys are rendered obsolete by inter-functional teams."⁵⁶ Large

corporations recognize that virtual organizations are better at competing in dynamic and complex environments because they more easily leverage available resources, interact and share ideas. Their mission focus and product orientation work well with decentralized authority, informal leadership and implicit coordination. These characteristics make virtual organizations flexible and innovative and capable of exploring new solutions to old problems.

The virtual organization's structural informality enables its flexibility. It lacks standardized control mechanisms and established procedures prominent in the traditional organization. Inferred in the nature of the virtual organization is a professional maturity among its members that do not require strict control or formality. This informal, autonomous, and self-regulated structure supports horizontal decentralization.

The size of the virtual organization affects some aspects of its performance. Unlike previously described organizational models, virtual organizations do not have discernable breaking points induced from overwhelming span of control problems. There is no limit to the virtual organization's span of control because direct leadership is limited and participating teams require mostly implicit coordination in corroboration with the focal organization's stated purpose. In fact, the virtual organization is more effective if it is larger because more products are tailored to specific needs of intelligence consumers. The virtual organizations are like geodesic domes in that they get stronger and more effective as they expand.⁵⁷

Following this logic, virtual organizations are better suited to more complex environments because as requirements increase to meet the demands of environmental complexity the size of the organization is also likely to increase. As the size of the organization increases the stronger and more capable it becomes. The virtual organization is more capable as it expands because more information and knowledge are shared. Information sharing is focused where it is needed through the use of extensive liaison devices and human interaction enabled by technology.

Focal intelligence staffs within the virtual organization do not maintain work skills outside identified core competencies. Unlike traditional organizations, physically grouping resources is usually not possible. An inability to group similar capabilities and talents limits the organization's immediate flexibility and ability to surge with appropriate expertise and occupational specialties when necessary leaving it susceptible to being overwhelmed by specific problems.⁵⁸ It could also result in diminished technical control of like systems and assigned analysts. However, methods are available to minimize potential problems of physical separation of resources using communication technology and group software products.

Virtual organizations have a large capacity for functional diversity. They assemble resources from large pools that exponentially enhance their capability to exploit a broad range of expertise for their consumers. Loosely coupled systems like virtual organizations preserve more diversity in responding to the environment and, therefore, can adapt to a considerably wider range of changes in the environment by creating organizational knowledge at various levels.⁵⁹ Standing intelligence organizations cannot maintain proficiency for every intelligence function, threat or variable specific to a region or some other category. Virtual organizations require small organic standing teams that must maintain core intelligence competencies. Virtual members are usually ad hoc and cover functions necessary to support less critical events for specific operations. Identification and maintenance of core competencies within focal intelligence organization are essential for the parent unit to conduct military operations. These core competencies should include the most relevant and difficult tasks that external organizations cannot easily replicate. Virtual teams complement the regular intelligence organization's existing capabilities with specific expertise not immediately available.

Potential military, civilian, governmental or non-governmental non-regular members transcend multidimensional virtual organizations. This is a potentially powerful intelligence organization because it is capable of tapping the full range of information resources. A problem of virtual

organizations is that member roles and responsibilities are seldom clearly defined and specified. Role ambiguity can lead to organizational wandering and ineffectiveness. Virtual teams have little direct supervision because leadership is shared throughout the organization. Formal reporting structures do not exist and often some form of control is required.

Vertical organizations leverage occupational specialties and expert capabilities from a pool of resources that potentially spans the entire intelligence community. Once organized, virtual organizations consist of military and civilian multi-echeloned teams. These teams are tailored to the operational environment to achieve the focal organization's goals. They exploit available resources through distributed work processes and assigning intelligence missions to appropriately qualified supporting members. Distributed work processes for collection, processing and analysis enable the virtual organization to exploit a broad range of capabilities from different locations.

Process

Virtual organizations must have a clear, specific and widely understood purpose. The purpose is the reason the organization exists. It is perhaps the most important component of the virtual organization because it's what keeps the organization together and focused.⁶⁰ Otherwise, implicit coordination, informal supervision and lack of standardization could lead to inefficiency and chaos rather than innovation. The purpose provides a unifying direction for the organization.

Virtual organizations are capable of coping with ambiguous operations where clear, specific and focused missions or tasks are not available because they are more flexible and capable of experimentation. "Only a whole containing many parts can allow a whole to persist while the parts die off or change to fit the new stimuli."⁶¹ The virtual organization is inherently capable of adjusting to its environment. Virtual members that are no longer necessary are easily disbanded.

Information flow is potentially quicker within the virtual organization because its structure is horizontal and generally 'flatter' than traditional and matrix organizations. Authority is delegated to

subordinate teams to conduct intelligence operations in virtual organizations allowing them to process information closer to the source. Virtual organizations improve responsiveness and potentially increase the accuracy and reliability of information because fewer people interpret it as it passes through organizational levels of authority. Intelligence products are generally less sanitized and not overly generic because information flow within the virtual organization is streamlined. This characteristic is extremely valuable in SASO for processing HUMINT that is highly perishable and usually more relevant to local commanders.

In theory, virtual teams are more efficient users of resources because their design is determined by operational requirements. All skills are critical to the virtual team because operational demands determine their composition. Virtual teams adjust form quickly and frequently to meet changes in the environment. More importantly, changes in form are based on mutual adjustment among self-regulated members.

In reality, virtual organizations are not efficient users of resources because no one person is ever totally in charge. Leadership focuses attention at certain points within the organization whenever necessary to achieve desired effects. This method does not guarantee consumer satisfaction. The lack of a clear chain of command and direct supervision degrades efficiency because no one is really in charge of controlling, coordinating and regulating the work processes and production of the organization.

A heavy reliance on information technology enables boundary permeability and virtual organizations to transcend time, space and traditional organizational barriers. Electronic data exchange is one method of achieving a common situational understanding within the virtual organization. However, technology also increases the number of boundaries within the organization. These boundaries constitute potential points of failure. If technology fails to link one organization with another failure will occur. Therefore, a weakness of virtual organizations is telecommunications because it is the glue that binds the organization.

A lack of standardization may contribute to integration problems. Integration of virtual members is as difficult as it is essential because of differentiation among supporting members. Each virtual member brings a host of expertise and unique capability as well as institutional bias. Strong communication networks and frequent interaction helps minimize problems, increase responsiveness and improve synergy through cooperation and collaboration. However, team isolation is likely if not carefully monitored.

Intelligence organizations in Bosnia exploited several external intelligence capabilities and sources across military services, government and non-government agencies and coalition partners.⁶² "The nature of the operation muddled any clear division among strategic, theater and tactical levels."⁶³ It also employed a multitude of organizational and technological liaison devices, maintained shared databases and conducted distributed analysis. In a sense, intelligence missions in Bosnia assumed some positive characteristics of virtual organizations as well as problems with control and duplication of effort. The strength of the virtual organization is based upon the capacity to span multidimensional boundaries and leverage expertise on the periphery when necessary.

Virtual organizations conduct decentralized decision-making. Although, commanders ultimately make decisions to execute with military forces, virtual members of the organization make decisions whenever appropriate. These decisions include determining what information is collected, how the information is collected, when the information is collected, what is done with the information once collected and what is sent to the commander to make a decision.⁶⁴ Arguably, this happens today in the traditional intelligence organization where subordinate staff members control what information is passed to the commander to make a decision. However, the nature of the virtual organization further reduces the commander's ability to control resources and fully participate in the decision-making process.

The virtual organization is less likely to effectively synchronize intelligence activities because it lacks an explicit chain of command and an ability to directly supervise work processes and team

members. Virtual teams are self-regulated. A hierarchical authority does not exist within a virtual structure to help maintain control over personnel, equipment, training, policies and procedures.

Virtual organizations experience problems maintaining unity of command because of its informal and decentralized nature. Informal leadership, multidimensional processes and decentralized structure contribute to violating the principle of unity of command. The virtual organization's horizontal structure limits leader ratios. This limitation increases the span of control within the virtual organization potentially leading to confusion and loss of focus. Theoretically, a virtual organization's intelligence activities are mostly distributed throughout the entire intelligence community. They involve finding the most effective and efficient unit to accomplish a mission or project. Available technology can support this requirement. However, input and output is almost impossible to control in the virtual organization because it is multidirectional and information enters and exits from multiple points of access within the organization.

Virtual organizations do not require the same considerations of proximity as other organizational structures. Proximity is impractical and defeats the purpose of a decentralized and innovative organization. Intelligence consumers must exploit the advantages of the virtual organization. In most circumstances, virtual members are experts in their field. They often bring years of experience, scholarship, expertise and maturity concerning a particular subject. SIOs must carefully manage intelligence requirements within virtual organizations to exploit their potential. Future SIOs must have exceptional project management skills. They must quickly assess and recognize strengths and weaknesses of supporting individuals, teams and organizations and assign requirements accordingly.

Behavior

Virtual organizations require better communication and cooperation among their members because success is based on the accomplishment of the focal organization's goals. Virtual members are self managed and often left to coordinate their own intelligence activities. Focal organizations must have

the ability to communicate requirements and provide direction to virtual members to satisfy organizational goals.

Virtual organizations potentially increase uncertainty within the focal organization. Uncertainty results from missing, unreliable, ambiguous, conflicting and complex information.⁶⁵ Commanders may lack confidence in non-regular virtual members and have an initial bias against product reliability. Multiple subordinate organizations may also interpret information differently and contribute to conflicting information. Lack of familiarity of the consumer's intelligence needs by supporting virtual members also contributes to uncertainty and may result in intelligence products seeming ambiguous and irrelevant. Excessive information from a potentially infinite number of virtual members may also create uncertainty. Missing information is an increasing possibility as external members electronically store information on large databases making retrieval difficult. These are important considerations because uncertainty may lead to organizational paralysis and hesitancy by the commander to make decisions.

Virtual organizations have limited numbers of middle grade leaders because supporting virtual teams are self-managed and do not require intermediaries to control and coordinate intelligence activities. Often virtual teams are organic members of theater and strategic intelligence agencies supporting a deployed unit. Intelligence officers participating as members of virtual organizations require strong communicative and interpersonal skills because they assume leadership roles. In the case of virtual organizations, "management is not a series of mechanical tasks but a set of human interactions."⁶⁶ Establishing effective human interaction is critical to accurately communicating intelligence requirements to appropriate supporting virtual agencies and teams.

Virtual organizations constitute a higher degree of risk because decision-making and work processes are generally decentralized and often there is a perceived lack of control. Confidence is critical among virtual team members otherwise products are ineffective or disregarded. The virtual environment potentially hinders the development of confidence among external teams and their

members.⁶⁷ Virtual members lack familiarity because they have limited opportunities to work together and develop relationships. Non-organic members must quickly prove themselves to the supported organization and develop the necessary confidence to work effectively and efficiently as a group.

Virtual organizations are better suited to long term operations during which members can develop working relationships. The longer the operation the more familiar organizational members become with each other's capabilities. Virtual members likely have more conflicts and friction during short-term operations because of issues among teams not accustomed to working together. Relationships and team building suffers at first. Interestingly, virtual organizations require more confidence among its members and teams than previously described organizations because of the physical separation.

The culture of virtual organizations is not firmly established within the intelligence community. In 1999, virtual implies an information technology capability. However, its acceptance is growing as resources and operational requirements necessitate its use. Recent deployments to Somalia, Haiti and Bosnia are examples of attempts to adapt virtual capabilities to traditional intelligence organizations by leveraging theater and strategic intelligence systems. Virtual capabilities reinforce standing intelligence organizations. This capability should not by itself necessitate changes to existing organizational structure that would disrupt stability. Some experts in organizational behavior argue that one can more easily transition to virtual organizations by creating and promoting networks among functional stovepipes within traditional and other organizational forms.⁶⁸

CHAPTER V

DESIGNING APPROPRIATE ORGANIZATIONS

This section evaluates the traditional, matrix and virtual intelligence organization models outlined in the previous three chapters. It assesses each model's potential to meet the environmental challenges of intelligence organizations posed by offense, defense, stability and support operations. Each of these military operations has associated environmental characteristics. These environmental characteristics are stability, complexity, and diversity.⁶⁹ This section evaluates which organizational model is most appropriate for coping with each of these environmental characteristics given the full spectrum of military operations.

Stability

Environmental stability refers to the degree of predictability within an environment. Predictable environments are stable and less predictable environments are dynamic. Predictability is defined as knowing with a high degree of certainty what will happen in the future. It is producing the same intelligence products, having the same intelligence customers and providing the same intelligence services on a recurring basis throughout an operation. For example, the National Training Center (NTC) is a stable environment because the Brigade S2 regularly interacts with the same brigade commander, staff and subordinate commanders. The S2 also produces similar intelligence products for each battle. On the other hand, an S2 in Bosnia could interact with multiple coalition, civilian and non-governmental resources and consumers located in several geographic areas. Intelligence products and services could also abruptly change depending on the situation and the requirements of each consumer.

The traditional intelligence organization is an appropriate organization in stable environments. Its structure is suited to stable environments because its formalized procedures, standardized skills and

centralized authority reduce uncertainty. The traditional organizational structure best controls behavior, promotes efficiency and ensures coordination among organizational components. However, these characteristics may discourage innovation and prevent consideration of multiple alternative courses of actions required in dynamic environments. Hierarchical and departmentalized organizations have limited ability to adapt to changes in dynamic environments. Their established structures and standardized work processes support demanding military operations requiring decisive action in stable environments. Intelligence tasks and functions are also more easily defined in stable environments. Rigid and clearly defined roles, responsibilities, processes, procedures and policies all support the execution of repetitive tasks and production typical of stable environments.

The matrix organizational structure is appropriate for both stable and dynamic environments because it combines the advantages of the more formalized functionally oriented traditional organization with the more informal and less rigid project-oriented structure. Matrix organizations function more effectively in dynamic situations than the traditional organization because authority and decision making are more decentralized. Decentralized and less formal organizational structures enable adaptability to environmental influences. Decentralized control allows leaders to rapidly shift focus and change priorities at the project team level. Project leaders within matrix organizations are capable of quickly adjusting structure and process to meet unforeseen requirements without waiting for permission from within the organization's chain of command.

The virtual organization is most appropriate for unstable dynamic environments. In fact, the organization itself creates unstable environments because virtual teams are self regulated and outputs are potentially unpredictable. It is inherently capable of adapting to its environment and most appropriate for unpredictable and more dynamic environments. Its informal nature and lack of standardized tactics, techniques and procedures provides organizational flexibility and adaptability. These characteristics make it well suited for intelligence missions that require a high degree of innovation and experimentation. Both are critical capabilities in dynamic environments.

Unfortunately, the virtual organization lacks the capacity to quickly respond to changing local conditions because of its geographic separation from the area of operation.

Complexity

Environmental complexity refers to differentiation. It is the scope of interconnected components within the intelligence organization. The greater the number and type of organizational components, the more complex the system. Components are defined as supporting non-organic resources including people, organizations, and equipment. The smaller the number of components, the simpler the system.

The traditional organization's highly centralized nature is most appropriate for simple environments. Organizational boundaries are clearly defined and its functionally aligned sections are well understood. All input and output flows through the ACE where it is processed and centrally controlled. Centralized control of analysis and standardized product development within one component of the organization is commensurate with intelligence requirements for simple environments. Decision making within the traditional intelligence organization is also centralized. Organic resources are capable of directing, collecting, processing, analyzing and disseminating the intelligence required by the parent unit especially when facing a conventional threat.

The matrix organization is appropriate for simple and complex environments. Its structure is both centralized and decentralized because it combines the structural advantages of the traditional and a malleable project form. Its structure is flexible enough to incorporate additional external resources. The strength of the matrix organization is its capacity to span multiple organizational boundaries and integrate external resources. It is designed to work in complex environments. The matrix structure is better able to integrate external resources because its structure is based on ad hoc teams and extensive liaison devices to coordinate the work of multiple components. Project teams conduct distributed

intelligence activities based on a functionally oriented structure. Dual authority among project and functional leaders enable decentralized decision-making required in more complex environments.

The virtual organization is appropriate for complex environments with multiple components because its structure is decentralized. Decentralized control, authority and decision-making provide additional flexibility to cope with environmental influences. Additional components and resources make the virtual organization stronger because more information and knowledge are shared. The virtual organization does not have breaking points induced from an overwhelming span of control of resources. The focal organization leadership has less control over the entire decision making process because work is distributed among self regulated teams. Therefore, span of control problems are less likely to unnecessarily strain leaders. The decentralized authority facilitates innovation by increasing representation of capabilities essential to solving problems in ambiguous environments.

Diversity

Environmental diversity refers to the scope of intelligence consumers, products and services required to support military operations. The greater the scope of support the more diverse the environment. Conventional operations are generally indicative of less diverse environments where there is only one area of operation, one enemy and traditional intelligence functions. Unconventional operations are generally indicative of more diverse environments with multiple locations, distributed threats and less traditional functions.

The traditional organization is more appropriate for less diverse environments where functionally aligned processes focus on one conventional military threat in a specific geographic area. Product diversity is predetermined according to the organization's standard intelligence requirements. Output consists of recurring standardized products and services generic enough to support a broad range of traditional intelligence consumers. The traditional structure has a limited capability to quickly reconfigure and adapt production requirements as easily as other organizational forms because of its

formal and standardized nature. The lack of occupational diversity also limits its capability to cover a broad range of threats across the spectrum of operations and in any environment.

The matrix organization is suited to diverse environments where multiple intelligence consumers require tailored analysis of nontraditional subjects like political issues, treaty compliance, civil unrest, election support, and refugee movements. Matrix organizations enable process and product diversification based on consumer requirements because they have the ability to change work processes, products or services from available resources. The SIO configures project teams to satisfy evolving intelligence requirements.

The virtual organization is most appropriate for diverse environments because it has the largest capacity for process and product diversity. The organization's ability to choose from large pools of resources exponentially enhances its capability to satisfy a broad range of requirements. It leverages expertise, knowledge and information from potentially infinite sources for its consumers. Virtual teams complement organic capabilities of the focal organization with specifically tailored expertise and ability. However, this capability assumes that virtual members will immediately respond with the appropriate products in time and without direct supervision.

This chapter briefly assessed the nature of each of the intelligence organizational models to determine which type is best suited to the full range of environmental stability, complexity and diversity. The traditional model is appropriate for stable, simple and less diverse environments. The matrix model is appropriate for all of the environmental influences. Its balanced nature supports its employment in all scenarios. However, it is not maximized, as are the other models for the extremes of environmental influences. The virtual organization is appropriate for dynamic, complex and diverse environments.

CHAPTER VI

CONCLUSION

The current military intelligence organization survived for almost two decades and its characteristics permeated the intelligence community from division to theater. However, increasing trends toward rapid full spectrum dominance, unconventional military operations, infusion of information technology and demands by commanders to provide timely, accurate and relevant intelligence support to decision making in any operational environment continues to unsettle the traditional intelligence organization. Recent deployments suggest that the traditional organization is probably not the optimal intelligence structure to accommodate future intelligence requirements. It rarely if ever deploys in its organic form or without augmentation to support military operations. In fact, the only time an ACE retains its organizational form established by a TO&E is when its parent unit participates in a BCTP Warfighter.

Military intelligence professionals argue that any structure can work effectively and efficiently through a lot of hard work, cooperation, and trust. In the future, however, it is more important to quickly recognize the types of environmental influences and develop a strategy to rapidly adjust and cope because rapid full spectrum dominance depends on it. Future intelligence organizations must anticipate and adjust to these environmental influences because appropriate intelligence organizational design is a future force multiplier.

The Army continues to define its role and adjust form while adapting to ambiguous operational environments by proposing innovational operational concepts. Intelligence organizations will follow suit. Their managed evolution is important in allowing the intelligence community to cope with an ambiguous and unpredictable environment. Still, the implications of these innovative operational concepts are enormous for intelligence organizations. Leaders at every level must have timely,

relevant, accurate, and predictive intelligence. Future intelligence organizations that support these concepts must be flexible, adaptable and responsive.

Intelligence teams and organizations must become increasingly more flexible in the 21st Century. The Army learned several lessons from the evolution of its intelligence organizations during the last two decades. One lesson is that two operations are never alike in any context. There are always differences in threat, geography, technology, time, scope, importance and space. Another lesson is that it is unlikely that a standardized, formalized and centrally controlled intelligence organization is appropriate for the full range of military operations in any environment. Admittedly, however, some intelligence functions within intelligence organizations are usually better conducted when they are centrally controlled.

Future intelligence organizations must be adaptable. They must cope with the environment by accommodating change through mutual adjustment. The current intelligence organization is too slow and rigid for most military operations anticipated in the 21st Century. Large standing organizations based on preplanned TDAs and TO&Es are easily overcome by events. "One size fits all" and "cookie cutter" solutions for intelligence organizations that solve tomorrow's problems will likely fail to appropriately support commanders during the initial stages of crisis deployment and potentially the duration of any operation without severe growing pains.

Intelligence organizations must be responsive. They must anticipate operational intelligence requirements and quickly respond by taking an organizational form that best supports operational requirements. Intelligence leaders must plan, prepare, and execute intelligence missions with an appropriate organizational structure in a fraction of the time it takes today. Strategic preclusion necessitates intelligence overmatch. Innovative intelligence products, processes, and organizational designs provide advantages to intelligence consumers.

The military intelligence community will continue debating the merits of ad hoc versus standing intelligence organizations. Most will settle on a balanced approach and prefer to focus on the

processes of building on small standing organic intelligence organizations when required. Each type of organization has advantages and disadvantages. Standing traditional organizations are resource intensive and not practical in constrained environments. If current trends continue, large standing intelligence organizations will become cost prohibitive because the broad array of threats makes it virtually impossible to develop expertise for all possible contingencies. Ad hoc organizations provide design flexibility by allowing units to quickly form tailored to meet likely operational requirements. However, they lack member familiarity and standard tactics techniques and procedures.

There are too many combinations of organizational characteristics, military operations, and environmental influences to predict with any degree of accuracy or specificity one type of organization optimized for supporting the range of military operations. The matrix organization is a good start. It balances the benefits of organizational flexibility, adaptability, and responsiveness with the challenges of environmental stability, complexity and diversity. The matrix organization best supports rapid full spectrum dominance and the range of military operations.

The solution to the complexities of organizational design and dynamics resides in leader training. Leaders must perfect staff tailoring to cope with environmental influences. Staffs are resources like combat units. Organizational characteristics provide specific capabilities to the commander. As such, commanders should similarly task organize, design and reconfigure their staffs as required. As in any discipline, critical discussion and debate generated within the intelligence community is a healthy undertaking. Much is dependent upon the range of stability, complexity and diversity within the immediate environment especially when attempting to discover an intelligence organization that best supports a responsive force capable of full spectrum operations in the information age.

Recommendations

The Army must train its leaders to compete in the future. 21st Century intelligence organizations and teams require officers trained to perform both leadership and managerial functions. Effective

intelligence organizations require officers with an understanding of organizational structure, design and dynamics and knowledge in resource management and interface management. Both are essential to building and maintaining effective and efficient organizations.

The Army must also educate its officers on boundary identification and manipulation. Understanding and manipulating organizational boundaries affects staff effectiveness and efficiency. Arguably, organizational boundaries should be more flexible, interoperable, adaptive, and responsive to change. Boundary spanning is becoming an essential task as Army intelligence staff organizations become smaller, more specialized, and increasingly dependent on information technology.

Intelligence organizations must have better future planning capabilities. More intelligence resources including personnel and equipment are required to support operational contingency planning. Future staff planning and coordination is critical for anticipating appropriate organizational design and identifying and incorporating assets from multiple echelons and units. Intelligence leaders are planners for future operations. As such, they are also critical decision-makers. They must focus on defining tasks, functions and missions as well as resource requirements, timelines and milestones based on planning assumptions.

ENDNOTES

¹ Department of the Army, Office of the Deputy Chief of Staff for Intelligence, *INTEL XXI: Strategy for the 21st Century*, 2-3.

² TRADOC Pamphlet 525-75 *INTEL XXI – A Concept for Force XXI Intelligence Operations*, (Fort Monroe, VA: TRADOC, 1 October 1996).

³ Leonard G. Nowak, "Division Intelligence: Left in Airland Battles Dust?" *Military Review*, no 67, (November 1987): 56.

⁴ Field Manual 34-1, *Intelligence and Electronic Warfare Operations*, (Washington, D.C.: Headquarters, Department of the Army, 27 September 1994); Field Manual 34-25-3, *All Source Analysis System (ASAS) and the Analysis and Control Element (ACE)*, (Washington, D.C.: Headquarters, Department of the Army, 3 October 1995).

⁵ FM 34-25-3, 2-4.

⁶ FM 34-1, 5-8; FM 34-25-3, 2-2. The author also served as the III Corps CMISE Commander from May 1993 to June 1995.

⁷ For specific functions performed by the CMISE see FM 34-1, 5-8 and FM 34-25-3, 2-2.

⁸ FM 34-25-3, 2-12.

⁹ William S. Wallace [MGENT] and William J. Tait, Jr. [LTC], "Intelligence in the AWE: A Winner for the Next Millennium," *Military Intelligence*, (April-June 1998): 4. The authors suggest some methods in organizational design include merging G2/S2 and MI Battalion cells into one intelligence cell at every Command Post and tactically tailoring intelligence personnel to perform unique but necessary functions such as BDA.

¹⁰ *Ibid.*, 7.

¹¹ U.S. Army Combined Arms Command, Center for Army Lessons Learned, *Operation Joint Endeavor: Task Force Eagle Transition (FOUO)*, (Fort Leavenworth, KS: CALL, May 1997), 12.

¹² Field Manual 34-25-3.

¹³ U.S. Army Combined Arms Command, Center for Army Lessons Learned, *Operation Uphold Democracy: Initial Impressions. Haiti D-20 to D+40 (FOUO)*, (Fort Leavenworth, KS: CALL, December 1994), 75-77; U.S. Army Combined Arms Command, Center for Army Lessons Learned, *Operation Joint Endeavor: Task Force Eagle Continuing Operations (FOUO)*, (Fort Leavenworth, KS: CALL, September 1996), 71; U.S. Army Combined Arms Command, Center for Army Lessons Learned, *Haiti: The U.S. Army and United Nations Peacekeeping, Initial Impressions (Volume III) (FOUO)*, (Fort Leavenworth, KS: CALL, July 1995), 40; Joint Warfighting Center, *Joint Task Force Commander's Handbook for Peace Operations*, (Final Draft (11/15)), 35; U.S. Army Combined Arms Command, Center for Army Lessons Learned, *Operation Restore Hope: Lesson Learned Report (FOUO)*, (Fort Leavenworth, KS: CALL, 3 December 1992 – 4 May 1993), I-25; U.S. Army Combined Arms Command, Center for Army Lessons Learned, *Lessons Learned Report: Bosnia Contingency Planning and Training (FOUO)*, (Fort Leavenworth, KS: CALL, December 1995), 53.

¹⁴ U.S. Army Combined Arms Command, Center for Army Lessons Learned, *Operation Joint Endeavor: Task Force Eagle Transition (FOUO)*, (Fort Leavenworth, KS: CALL, May 1997), 12. Task Force Eagles'

intelligence analysts were trained for targeting based analysis consisting of conventional order of battle, high payoff targets and military courses of action. These skills do not adequately prepare intelligence analysts to be responsive to commander's intelligence needs in unconventional operations. Analysts require training in how to think. Their skill sets should include logic, pattern analysis and reasoning. Knowing what to think will be less important in the 21st Century.

¹⁵ U.S. Army Combined Arms Command, Center for Army Lessons Learned, *Operation Joint Endeavor: Task Force Eagle Transition (FOUO)*, (Fort Leavenworth, KS: CALL, May 1997), 12.

¹⁶ U.S. Army Combined Arms Command, Center for Army Lessons Learned, *Operation Restore Hope: Lesson Learned Report (FOUO)*, (Fort Leavenworth, KS: CALL, 3 December 1992 – 4 May 1993), I-17.

¹⁷ Lawrence G. Hrebiniak, *Complex Organizations*, (St. Paul Minnesota: West Publishing Company, 1978), 91.

¹⁸ Joint Warfighting Center, *Joint Task Force Commander's Handbook for Peace Operations*, (Final Draft (11/15)), 16.

¹⁹ *Ibid.*, 32-36.

²⁰ *Ibid.*, 35. See also U.S. Army Combined Arms Command, Center for Army Lessons Learned, *Haiti: The U.S. Army and United Nations Peacekeeping, Initial Impressions (Volume III) (FOUO)*, (Fort Leavenworth, KS: CALL, July 1995), 40.

²¹ Joint Chiefs of Staff, *Concept for Future Operations*, (Washington D.C.: The Joint Chiefs of Staff, May 1997), 79.

²² U.S. Army Combined Arms Command, Center for Army Lessons Learned, *Operation Restore Hope: Lesson Learned Report (FOUO)*, (Fort Leavenworth, KS: CALL, 3 December 1992 – 4 May 1993), XIV-31.

²³ U.S. Army Combined Arms Command, Center for Army Lessons Learned, *Lessons Learned Report: Bosnia Contingency Planning and Training (FOUO)*, (Fort Leavenworth, KS: CALL, December 1995), 52-53.

²⁴ U.S. Army Combined Arms Command, Center for Army Lessons Learned, *Operation Joint Endeavor: Task Force Eagle Transition (FOUO)*, (Fort Leavenworth, KS: CALL, May 1997), 13.

²⁵ Although not specifically stated one can infer it was better to task organize CI/HUMINT Teams to subordinate units to support responsive and relevant intelligence collection and analysis. The initial impressions report for Operation Joint Endeavor states that the normal team consisted of four soldiers, a 97B/97E combination, usually headed by a warrant officer. Teams worked in DS of TFE maneuver units, with several teams in GS to the task force. See U.S. Army Combined Arms Command, Center for Army Lessons Learned, *Operation Joint Endeavor: Task Force Eagle Transition (FOUO)*, (Fort Leavenworth, KS: CALL, May 1997), 12; Another source states there were problems with debriefing collection assets by S2s. Some units were so overwhelmed by the sheer number of missions performed on a daily basis, and the unusual number of traditional and nontraditional collectors, that many collection assets returning from missions were simply not debriefed. U.S. Army Combined Arms Command, Center for Army Lessons Learned, *Operation Joint Endeavor: Task Force Eagle Continuing Operations (FOUO)*, (Fort Leavenworth, KS: CALL, September 1996), 63.

²⁶ Joint Universal Lessons Learned, JULLSNUM: 1960-01714, dated 7 November 1997. One of several observations regarding the ACT states that when ACT enclave was present, near real time information was available. The ACT provided excellent near real-time information on the enemy. Information provided in the form of overlays, UAV imagery and JSTARs MTI was integral to planning and the decision-making process.

²⁷ U.S. Army Training and Doctrine Command Analysis Center, *Division XXI Advanced Warfighting Experiment (DAWE) (Final Report)*, (Fort Leavenworth, KS: TRADOC, July 1998), 36. According to the observer, other vertical relationships were slow and inefficient because the command and support relationship and the lack of a habitual training relationship created an environment in which it was difficult to request and execute.

²⁸ Brigades tended not to trust anything they didn't produce themselves and there was a feeling that higher echelons did not understand how to package intelligence products for subordinate units. See National Defense University, *Lessons From Bosnia: The IFOR Experience*, (Washington, D.C.: Institute for National and Strategic Studies, 1997), 117.

²⁹ United States European Command, *Joint Task Force Staff Officer's Brain Book*, (April 1993), 1. USMACV, USCENCOM and USEUCOM each have different procedures for forming task forces.

³⁰ Wallace [MGEn] and Tait, Jr. [LTC], "Intelligence in the AWE: A Winner for the Next Millennium," 7.

³¹ *Ibid.*, 7.

³² Ron Ashkenas, "Cross boundaries" *Executive Excellence* 16, no. 1 (January 1999): 18.

³³ U.S. Army Training and Doctrine Command Analysis Center, *Division XXI Advanced Warfighting Experiment (DAWE) (Final Report)*, (Fort Leavenworth, KS: TRADOC, July 1998), 39.

³⁴ U.S. Army Combined Arms Command, Center for Army Lessons Learned, *Operation Uphold Democracy: Initial Impressions, Haiti D-20 to D+150 (Volume II) (FOUO)*, (Fort Leavenworth, KS: CALL, April 1995), 176.

³⁵ Michael L. Tushman and Charles A. O'Reilly III, "Building Ambidextrous Organizations: Forming Your Own Skunk Works" *Health Forum Journal*; (Mar/Apr 1999): 23, 64. The authors state that effective organization's [have] team members [that are] comfortable working together and understand one another's strengths and weaknesses to avoid the negative consequences of politics and to speed decision-making.

³⁶ J. R. Galbraith, *Designing Complex Organizations*, (Reading, Massachusetts: Addison-Wesley, 1973), 144.

³⁷ Henry Mintzberg, *Structure in Fives: Designing Effective Organizations*, (Englewood Cliffs, New Jersey: Prentice Hall, 1993), 67.

³⁸ Lydal F. Urwick, "The Manager's Span of Control," *Harvard Business Review*, (May – June 1956): 41.

³⁹ P. E. Holden, C. A. Pederson, and G. E. Germane, *Top Management*, (New York: McGraw Hill, 1968), 95; J.C. Worthy, *Big Business and Free Men*, (New York: Harper and Rowe, 1959), 109. These sources reference first line supervisors of corporate managers in retail store chains as the supervised. The numbers of each are 10 to 14 and as many as 40 respectively.

⁴⁰ Mintzberg, *Structure in Fives: Designing Effective Organizations*, 47.

⁴¹ *Ibid.*, 16.

⁴² Harold Kerzner, *Project Management: A Systems Approach to Planning, Scheduling, and Controlling (Sixth edition)*, (New York, NY: John Wiley and Sons, Inc. 1998), 245.

- ⁴³ Ibid., 115.
- ⁴⁴ Ibid., 116.
- ⁴⁵ Mintzberg, *Structure in Fives: Designing Effective Organizations*, 96-97.
- ⁴⁶ National Defense University, 60. This source also provides examples of the various external sources. It states that the major challenge was leveraging information from various sources...including public affairs, civil affairs, PSYOP, military police, political advisors, UN organizations, the International Police Task Force, IOs, NGOs, PVOs, joint commissions, government agencies, intelligence organizations, and the Internet. See page 55.
- ⁴⁷ U.S. Army Combined Arms Command, Center for Army Lessons Learned, *Haiti: The U.S. Army and United Nations Peacekeeping, Initial Impressions Volume III, (FOUO)*, (Fort Leavenworth, KS: CALL, July 1995), 55.
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- ⁵⁵ Jessica Lipnack and Jeffrey Stamps, "Virtual Teams," *Executive Excellence*, (May 1999): 14.
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- ⁵⁸ Paul S. Licker, *Management Information Systems: A Strategic Leadership Approach*, (Fort Worth, Texas: The Dryden Press, 1997), 299.
- ⁵⁹ Weick, K. E., "Educational Organizations as Loosely Coupled Systems," *Administrative Science Quarterly*, 21, (1976): 1-19.
- ⁶⁰ Ibid., 14.
- ⁶¹ Kevin Kelly, *Out of Control*, (Reading, Massachusetts: Addison -Wesley Publishing Company, 1994), 22.

⁶² National Defense University, 60.

⁶³ Ibid., 54.

⁶⁴ T.T. Paterson, *Management Theory*, (London: Business Publications Ltd., 1969), 150.

⁶⁵ J. F. Schmitt and G. Klien, "Fighting in the Fog: Dealing with Battlefield Uncertainty," *Marine Corps Gazette*, (August 1996): 62-69.

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⁶⁷ Jarvenpaa, S. L., Knoll, K., & Leidner, D. E., "Is Anybody Out There? Antecedents of Trust in Global Virtual Teams," *Journal of Management Information Systems*, 14, no. 4, (Spring 1998): 29-64.

⁶⁸ Jessica Lipnack and Jeffrey Stamps, "Virtual Teams: The New Way to Work," *Strategy and Leadership*, (January/February 1999): 14.

⁶⁹ Mintzberg, "Structure in Fives: Designing Effective Organizations," 136.

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